EAST AFRICAN COMMUNITY

EDICT OF GOVERNMENT

In order to promote public education and public safety, equal justice for all, a better informed citizenry, the rule of law, world trade and world peace, this legal document is hereby made available on a noncommercial basis, as it is the right of all humans to know and speak the laws that govern them.

EAS 742 (2010) (English): Food grade cassava starch – Specification



BLANK PAGE





PROTECTED BY COPYRIGHT

EAS 742:2010
ICS 67.080.20

EAST AFRICAN STANDARD

Food grade cassava starch — Specification

EAST AFRICAN COMMUNITY

© EAC 2010

First Edition 2010

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that “Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose”.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

© East African Community 2010 — All rights reserved*

East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.int

* © 2010 EAC — All rights of exploitation in any form and by any means reserved worldwide for EAC Partner States’ NSBs.

Acknowledgement

This standard was developed with support from the Policy Analysis and Advocacy Programme (PAAP) of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA). This was possible though a grant by the United States Agency for International Development (USAID). This support was used in the process of formulation and mobilization of stakeholders to review the standard in national and regional fora.

ASARECA is a non-political association of agricultural research institutes in: Burundi, DR Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. ASARECA serves as a platform for promoting regional research and in the sharing of benefits and spillovers that derive from such research. The mission of ASARECA is to "*Enhance regional collective action in agricultural research for development, extension and agricultural training and education, to promote economic growth, fight poverty, eradicate hunger and enhance sustainable use of resources in Eastern and Central Africa*".

Development of standards has been part of PAAP's contribution to changing the way business is done in crucial agricultural sectors to increase efficiency and/or reduce waste through rationalization and harmonization of policies, laws, regulations and procedures. Rationalization focuses on how countries conduct business in a given subsector, and determines what should be done to make the procedures and processes more efficient. Harmonization brings together regionally different approaches (policies, laws, regulations and procedures) into unified approaches that are applied across the countries. This harmonization process allows commodities and factors to move freely across national boundaries, thereby improving domestic and foreign investment by expanding markets beyond national borders. Over time this will lead to gradual attainment of seamless borders for trade in cassava and cassava products across the region.

Removal of regulatory bottlenecks to transboundary movement of cassava products in the region will enhance competitiveness of trade and value addition in the sub-sector. It will improve the value chains by supporting product differentiation and hence increased trade in cassava products in the region. This will ultimately contribute to incomes, employment generation and improved welfare in the region. This fits snugly with the aspirations of ASARECA as a key player contributing to economic development of the region.

© EAC 2010 — All rights reserved

Introduction

Starch is one of the most abundant substances in nature, and is a renewable and almost unlimited resource. Starch is produced from grain or root crops. It is mainly used as food, but is also readily converted chemically, physically, and biologically into many useful products. To date, starch is used to produce such diverse products as food, paper, textiles, adhesives, beverages, confectionery, pharmaceuticals, and building materials.

Cassava starch has many remarkable characteristics, including high paste viscosity, high paste clarity, and high freeze-thaw stability, which are advantageous to many industries.

Cassava starch is produced primarily by the wet milling of fresh cassava roots but it can also be produced from dry cassava chips.

The process of starch extraction from cassava is relatively simple because there are only small amounts of secondary substances, such as protein, in the roots. When cassava roots are harvested or selected for starch extraction, age and root quality are critical factors. Cassava roots need to be processed almost immediately after harvest, as the roots are highly perishable and enzymatic processes accelerate deterioration within one to two days. The food industry constitutes one of the largest consumers of starch and starch products. In addition, large quantities of starch are sold in the form of products sold in small packages for household use. The production of cassava starch has increased considerably in recent years.

 © EAC 2010 — All rights reserved

Plantains — Specification and grading

1 Scope

This East African Standard specifies the requirements and the methods of sampling and test for food grade cassava starch.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EAS 38, *General standard for the labelling of pre-packaged foods*

EAS 39, *Code of practice for hygiene in the food and drink manufacturing industry*

EAS 103, *General standard for food additives*

EAS 217-2, *Methods for the microbiological examination of foods — Part 2: General guidance for the enumeration of micro-organisms — Colony count technique at 30 °C*

EAS 217-2, *Methods for the microbiological examination of foods — Part 8: Enumeration of yeast and moulds in foods*

EAS 738, *Fresh sweet cassava — Specification*

EAS 739, *Dried cassava chips — Specification*

ISO 1666, *Starch — Determination of moisture content — Oven-drying method*

ISO 5809, *Starches and derived products — Determination of sulphated ash*

ISO 5810, *Starches and derived products — Determination of chloride content — Potentiometric method*

ISO 7251*, Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 10520*, Native starch — Determination of starch content — Ewers polarimetric method*

ISO 11212-1, *Starch and derived products — Heavy metals content — Part 1: Determination of arsenic content by atomic absorption spectrometry*

ISO 11212-2*, Starch and derived products — Heavy metals content — Part 2: Determination of mercury content by atomic absorption spectrometry*

ISO 11212-3, *Starch and derived products — Heavy metals content — Part 3: Determination of lead content by atomic absorption spectrometry with electrothermal atomization*

ISO 11212-4, *Starch and derived products — Heavy metals content — Part 4: Determination of cadmium content by atomic absorption spectrometry with electrothermal atomization*

© EAC 2010 — All rights reserved

3 Description

food grade cassava starch
white granular glucose polymer obtained by wet extraction process from mature cassava (*Manihot esculenta* Crantz) storage root or cassava chips or cassava flour

4 Terms and definitions

For the purpose of this standard, the following term and definition shall apply.

4.1
foreign matter
inorganic matter such as sand, glass, metal, stones, clay and mud and organic matter such as chaff, straw, weed seeds and insects or insects fragments, rodent hairs

4.2
food grade material
one that will not transfer non-food chemicals into the food and contains no chemicals which would be hazardous to human health

5 Essential quality and compositional requirements

5.1 Sensory characteristics

Food grade cassava starch shall be

a) white in colour,

NOTE Starch may be not white provided that it is characteristic of the raw material.

b) tasteless, and

c) odourless

d) free from foreign matter

5.2 Physical properties

Not less than 95 % of mass of food grade cassava starch shall pass through a sieve of 140 µm mesh screen.

a) The food grade cassava starch shall be insoluble in cold water and

b) Food grade cassava starch shall be insoluble in 96 % ethanol.

5.3 Chemical properties

Food grade cassava starch shall give a blue-black colouration when tested with iodine.

5.4 Compositional quality requirements

Food grade cassava starch shall conform to the compositional quality requirements shown in Table 1.

 © EAC 2010 — All rights reserved

Table 1 — Compositional Quality requirements

Analytical characteristic	Requirement	Method of test
Total acidity, %, by mass, max.	1.0	
pH	5 - 7	
Cyanide content, mg/kg, max.	10.0	DEAS 744
Starch content, %, by mass, min.	95.0	ISO 10520
Moisture, % by mass, max	12.0	ISO 1666
Fibre, % by mass on dry weight basis, max.	0.2	
Sulphated ash, % by mass, max.	0.6	ISO 5809
Chloride, %, by mass, max.	0.64	ISO 5810

6 Food additives

Food-grade cassava starch may contain a maximum of 0.2 % ascorbic acid as colour improver and other additives in accordance with EAS 103.

7 Contaminants

7.1 Pesticide residues

Food grade cassava starch shall conform to maximum residue limits for pesticide residues established by the Codex Alimentarius Commission for this commodity.

7.2 Other contaminants

Food Grade cassava starch roots shall comply with the maximum levels of the Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193).

8 Hygiene

Food grade cassava starch shall be prepared and handled in a hygienic manner in accordance with EAS 39 and shall conform to microbiological limits specified in Table 2.

Table 2 — Microbiological limits for food grade cassava starch

Micro-organisms	Maximum limit	Method of test
Total aerobic count, CFU/g, max.	10^4	EAS ISO
Escherichia coli, in 1 g	shall be absent	ISO 7251 ISO 4833
Salmonella	Shall be absent	ISO 6579
Yeast and mould, CFU/g, max.	10^3	ISO 21527-2

9 Packaging

Food grade starch shall be packaged in food grade materials, which is hermetically sealed to safeguard the hygienic, nutritional, and organoleptic qualities of the product. The packaging materials shall comply with the environmental legislation of the destination country,

10 Weights and measures

Food grade cassava starch shall be packaged in accordance with Weights and Measures requirements of the destination country.

© EAC 2010 — All rights reserved

11 Labelling

In addition to the requirements of EAS 38; the following labeling requirements shall apply and shall be **legibly** and **indelibly** marked

a) the common name of the food to be declared on the label shall be 'Food grade cassava starch';

b) the net contents by weight in metric (`Systeme International') units;

c) the name and physical address of the manufacturer / distributor;

d) the country of origin;

e) lot identification;

f) date of manufacture and best before date

g) the statement `Human Food' shall appear on the package.

h) storage conditions as ‘store in a cool dry place away from contaminants’

i) instructions on disposal of used package.

12 Method of sampling and analysis

Sampling shall be done in accordance with ISO 13690.

13 Criteria for conformity

A lot shall be declared as conforming to this standard if each sample inspected or analyzed for quality requirement conforms to the provision of this standard.

© EAC 2010 — All rights reserved